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THE LITTLE REDFISH (*Onchorynchus Nerka*) AT SCRANTON, PENNSYLVANIA

The little redfish of the Pacific coast, a dwarf form of *Onchorynchus nerka* Walbaum, sometimes considered as a distinct species, *O. kennerlyi* Suckley, appears to be established in Lake Winola near Scranton, Pennsylvania, as a highly colored male in breeding condition was received for identification from that place together with the following data which indicates the degree of success attained.

The fish were first noticed by the natives on September 22, 1923 and were usually found in schools of from two to three hundred individuals. The maximum size so far obtained was 355 mm. and the minimum 180 mm. (presumably total length). Since first seen they have been observed running up a small stream emptying into the lake and several females have been taken so ripe that the ova issued from them simply on landing in a small seine. They run up this stream into very shallow water and numbers of dead ones which were spawned out have been seen. Lake Winola is a natural body of water, has a sandy bottom at its upper end and is land locked. Below a depth of six feet it is very cold

even in summer and in places is probably over one hundred feet deep.

The specimen examined, which was unquestionably of this species, and the preceding data were obtained through the kindness and interest of Mr. L. G. Thomas of Scranton.

Inquiry as to the probable origin of these fish at both the U. S. Bureau of Fisheries and the Pennsylvania Board of Fish Commissioners failed to reveal any definite data concerning their introduction. Mr. N. T. Buller, State Commissioner stated ". . . we have no record of having planted any salmon in Lake Winola" and further went on to say that some parties had communicated with him concerning the same matter but that their descriptions were inadequate for identification. He also stated that many species from the West had been planted in other Pennsylvania waters in the past but with no success.

The only probable hypothesis appears to be that there were some eggs or fry of this species released in other waters of the State and that in some unknown manner they were transported to Lake Winola where a degree of success has been met with. As this appearance of them has been the first, according to Mr. Thomas, it would naturally seem that their period of growth had been spent in deeper waters, possibly below the lines of most anglers. Unless there are some conditions here that tend to retard or accelerate their development, maturity should be reached in about four years. If the fish as found are the result of a single introduction, accidental or otherwise, it was probably not made earlier than 1918. If such is the case the offspring should not appear as spawners before 1927, in that these fish all die after spawning once. It should be interesting to watch the progress of these fish, especially if the above is true, regarding the number of generations necessary for laggards and precocious individuals to fill in the intervening years with spawners. A knowledge of the exact origin of these fish would be of value for if *O. kennerlyi* is really

only a dwarfed form of *O. nerka* it is conceivable that these are the offspring of the larger blue back form, dwarfed by local conditions which may be similar to those that produced the original dwarfing in western waters.

This is recorded as an addition to the successfully introduced fish fauna of Pennsylvania. The specimen examined, a ripe male of 305 mm. in standard length, is now preserved in the American Museum of Natural History.

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HETEROMYCTERIS
A GENUS OF BROAD SOLES

In his "Uebersicht der Soleinæ" 1858, 103, Dr. J. J. Kaup indicated a new genus and species of soles from the Cape of Good Hope, under the name of *Heteromycteris capensis*. A specimen of this species, received from Professor J. F. Gilchrist of Cape Town, shows that it belongs to the *Achirinæ*, having the ventrals broad based, the right ventral joined to the anal. So far as I see, the genus is quite identical with the Japanese genus *Amate* Jordan and Starks (1906), (*Solea japonica* Schlegel), being distinguished from *Achirus* by the elongate or lanceolate form. The Japanese species may therefore stand as *Heteromycteris japonicus*.

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ADDITIONAL RECORDS FOR the ALABAMA HERPETOLOGICAL CATALOGUE

LIZARDS

Anolis carolinensis Voigt

Common in Autauga and Montgomery Counties.

Sceloporus undulatus (Latreille)

Specimens from Autauga and Jackson Counties are contained in the present collection.

Ophisaurus ventralis (Linné)

Common on the northern side of Bear Swamp, Autauga County, where, I am informed, they are often plowed up. Specimen.

Cnemidophorus sexlineatus (Linné)

Common in Autauga County, and there are specimens in the collection from Sand Mountain, Jackson County.

Leiolopisma laterale (Say)

Common in Autauga and Montgomery Counties. Specimen from the former.

Eumeces fasciatus (Linné)
(*Plestiodon fasciatus*)

Specimens from Jackson County. Common in Autauga County.

SNAKES

Diadophis punctatus punctatus (Linné)

Specimens from Autauga County.

Heterodon simus (Linné)

Löding records this species from Baldwin County only. I have taken it in Autauga County.

Opheodrys aestivus (Linné)

This species has been taken at Booth and Prattville, adding Autauga to Löding's list of five counties.

Coluber constrictor constrictor (Linné)

Common in Autauga and Montgomery Counties. There is a specimen from Prattville in the collection.

Elaphe obsoleta confinis (Baird and Girard)

I have taken this form near Booth, Autauga County.

Cemophora coccinea (Blumenbach)

Löding reports this species from three counties. A

single specimen taken at Barachias enables me to add Montgomery County to the list.

Natrix sipedon fasciata (Linné)

Specimens from Booth and Barachias add Autauga and Montgomery Counties to Löding's list.

Thamnophis sauritus (Linné)

Autauga is added to Löding's three county records on the basis of a specimen from Bear Swamp.

Micrurus fulvius (Linné)

An additional county record is furnished by a specimen from Booth, Autauga County.

Agkistrodon mokasen (Beauvois)

I have taken this species at Barachias, Montgomery County.

Agkistrodon piscivorus (Lacepede)

The cotton-mouth has been collected at Barachias, Montgomery County, and often killed in Autauga County.

Sistrurus miliarius (Linné)

Löding records the ground rattler from four counties. There are specimens in the collection from the additional counties of Autauga and Shelby.

Crotalus horridus (Linné)

To the list of counties recorded by Löding, I can add Montgomery on the basis of a specimen taken by my brother at Barachias. This rattlesnake, the largest I have ever seen, measured five feet two inches in length and weighed five and one half pounds. I have also observed the species in Bear Swamp, Autauga County.

TURTLES

Chelydra serpentina (Linné)

Common in the sloughs and sluggish creeks of Montgomery County.

Terrapene carolina carolina (Linné)

Common in the deciduous woods of Montgomery County. Specimens have been examined critically.

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A TERRESTRIAL FORM OF SIREN LACERTINA

On July 30th, I secured at Camp Goodyear, summer encampment of the Boy Scouts of the Florida Parishes, which is located on the Old Knott Plantation about three miles east of Mandeville, La., a specimen of *Siren lacertina* with measurements and characters as follows:

Total length (as is), 5 7-8 inches. Length from snout to arm insertion, 3-4 inch. Length to anus, 4 5-8 inches. Tail incomplete, approximately one-half missing. The dorsal and ventral dermal fins are absent on the portion of the tail which remains. Branchiae entirely absent.

The structure of the specimen shows that it is in all respects adapted to a land life. The following abstracts from my field notes may be of interest in this connection.

The specimen was collected in flat mixed woodland about one-third of a mile from the fringe of marshes and cypress swamps which border Lake Pontchartrain in that locality. In the marsh and swamp, which are normally habitats for the species, the ground water level was reduced by the unprecedented drought to approximately six feet below the surface of the ground and probably ten or twelve feet in the location where the specimen was obtained. All ditches and low places had been dried for several months. The specimen was collected by one of the boy scouts while cleaning under his tent with a hoe. According to his claim, it was at the surface of the ground under dead oak leaves, the tent being pitched under a large live oak. The injury to the tail and two cuts near the anterior end were caused by the hoe before capturing.

E. D. Cope in the Batrachia of North America makes the following statements in regard to the curious condition which he had frequently observed in the branchiae of the Sirens.

"The fringes are frequently in a state of apparent

partial atrophy and inclosed in a common dermal investment of the branchial ramus, or all the rami are covered by a common investment, so as to be absolutely functionless and immovable. . . I have . . . observed that the functionless condition . . . is universal in young individuals . . . of five and six inches in length, and that in a specimen of a little over three inches they are entirely rudimentary and subepidermal. I have, in fact, noticed that it is only in large adult specimens that the branchiae are fully developed in structure and function. . . Of course only direct observation can show whether sirens have branchiae on exclusion from the egg. . . Nevertheless, it is evident that the branchiae soon become functionless, so that the animal is almost if not exclusively an air breather, and that functional activity is not resumed till a more advanced age. That Sirens may be exclusively air breathers I have shown by observations on a specimen in an aquarium which, for two months, probably from the attacks of fishes, had no branchiae at all.

"In explanation of this fact, it may be remarked that this atrophy can not be accounted for on the supposition that it is seasonal and due to the drying up of the aquatic habitat of the sirens. The countries they inhabit are humid, receiving the heaviest rainfall of our Eastern States, and there is no drought. The only explanation appears to me to be that the present sirens are the descendants of a terrestrial type of Batrachia, which passed through a metamorphosis like other members of their class, but that more recently they have adopted a permanently aquatic life, and have resumed their branchiae by reversion."

I have occasionally collected a few specimens of young Sirens (4 to 10 inches) in that Parish (St. Tammany), but never have seen them out in deep water as is the case with the adults. Usually they were at the edges of marshes or ponds under debris, but in one instance a specimen was collected one quarter of a mile from the edge of the marsh under a plank in a wet field. However the ground water was at the

surface due to heavy rains and there were subterranean connections with the marsh. They undoubtedly find more protection from natural enemies in such habitats and there is little need for the branchiae under such conditions. In all cases, however, branchiae were present and functioned when the animals were placed in aquaria.

In the specimen described in this paper, it is evident that the complete atrophy of the branchiae is due to the environmental condition brought about by unprecedented drought. So prolonged has it been, that a dry-skinned specimen of *Amphiuma tridactulum* was caught crawling over the ground in one of the tents, apparently also thoroughly adapted to the changed conditions, and I have this past summer noted other phenomenal amphibian adaptations in what normally would be moist or wet regions.

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